



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/648,672

08/23/2000

Stewart Kevin Hester

5036

8001

2292

7590

06/15/2005

BIRCH STEWART KOLASCH & BIRCH

PO BOX 747

FALLS CHURCH, VA 22040-0747

EXAMINER

PAYNE, DAVID C

ART UNIT

PAPER NUMBER

2638

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/648,672

Applicant(s)

HESTER ET AL.

Examiner

David C. Payne

Art Unit

2638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21 and 28 is/are allowed.
- 6) ☒ Claim(s) 1-20, 22-27 and 29-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. The indicated allowability of claims 1-14, 19, 21 and 24-28 is withdrawn in view of the newly discovered reference(s) to Heiles US 6701086 B1 (Heiles). Rejections based on the newly cited reference(s) follow.
2. Applicant's arguments with respect to claims 15, 17, 19, 20, 22, 23, 35 and 36 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 6-10, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Merli et al. US 6,088,141 (Merli) in view of Heiles US 6701086 B1 (Heiles).

Re claim(s) 1, 6

Art Unit: 2638

Merli disclosed

An optical node for an optical network transporting an optical datastream, the node comprising: at least one port for optically coupling the node to at least one neighboring node (*figure 2*); a fault restoration element (*figure 2 #258*) to adjust the operation of the node in response to a fault; at least one optical sensor for measuring optical characteristics of the optical datastream at the node; a signal sensor configured to receive optical characteristics of the optical datastream from an upstream optical device; and a local controller (*figure 2 #258*) configured to activate the fault restoration element if optical characteristics have values corresponding to a potential fault requiring activation of the fault restoration element. (*e.g., col./line(s): 4/34-52*)

Merli does not disclose a comparison of one set of received upstream optical characteristics with another set of locally measured optical characteristics.

Heiles disclosed

FIG. 2 shows a measuring arrangement at the transmission side MQ and a measuring arrangement at the reception side MS. Given the measuring arrangement at the transmission side, the signal that is to be checked, the useful load signal (working signal) WS, of a wavelength multiplexer (WDM signal) with a plurality of transmission channels for example, is supplied to a first measuring means ME1 via a first coupler K1, whereby only a small part in terms of power must be coupled out. This measuring means has the function of providing measurements of the signal state, or respectively, of the signal quality at the beginning of a transmission path. Signal parameters are the optical signal/-to-noise spacing, the power level or the frequency for example, (*e.g., col./line(s): 2/35-50*).

Art Unit: 2638

The useful load signal WS is partly coupled out via a second coupler K2 and supplied to a second measuring means ME2. Within the same time intervals--exactly the same sections of the useful signal--quality measuring of the received signal is carried out and the measured values MES are also supplied to the comparison means MCU. With the aid of the measured values of the transmission side and reception side, this determining to what extent the signal quality has changed and sends the measuring results ME to a central location ZS, (e.g.,

*col./line(s): 3/5-15)*

It would have been obvious to one of ordinary skill in the art at the time of invention to use the Heiles measurement and comparison system within the Merli nodes in order to self-diagnose and monitor faults at other points in the network for rerouting traffic.

Re claim(s) 8-10

Merli disclosed

a plurality of output ports for communicating the data stream to at least one other node via at least one optical fiber link; (e.g., figure 2 #206, #207)

a line switcher arranged to select an optical pathway for the data stream between two of the ports of the node in response to a line switch command; (e.g., col./line(s): 4/34-52)

a demultiplexing stage arranged to select at least one channel from said datastream, said stage including at least one redundant electro-optic element configured to replace a defective electro-optic element of said stage in response to an equipment switch command; (e.g., figure

2)

Art Unit: 2638

the controller initiating a line switch to isolate fault or an equipment switch to isolate an equipment fault. (*abstract*)

Re claim(s) 7, 13 and 14

Merli disclosed looking at the power over each channel (*e.g., col./line(s): 2/64-67, 4/35-50*).

5. Claims 2-5, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Merli et al. US 6,088,141 (Merli) and Heiles US 6701086 B1 (Heiles) as applied to claims 1 and 10 above, and in further view of Yemini et al. 5,528,516 (Yemini).

Re claim(s) 2-5, 11 and 12

The modified invention of Merli and Heiles disclosed a local node processor but not a comprising a microprocessor having a software program residing on said micro-processor for generating the line switch commands. Yemini disclosed an apparatus with fault reporting and event correlation that uses a microprocessor and software (*figure 1a*). It would have been obvious to one of ordinary skill in the art to use the Yemini elements in the Merli/Heiles invention since these systems facilitate human management of increasingly complex network problems (*e.g., col./line(s): 1/30-45*).

6. Claims 15-20, 22-27, 29-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Merli et al. US 6,088,141 (Merli) in view of Heiles US 6701086 B1 (Heiles) and Fee et al. US 5,914,794 (Fee).

Art Unit: 2638

Re claim(s) 15, 20, 24-26, 35 and 36

Merli does not disclose at least one transceiver for communicating optical network status information via an inter-node optical communications channel with a neighboring node.

Heiles disclosed

FIG. 2 shows a measuring arrangement at the transmission side MQ and a measuring arrangement at the reception side MS. Given the measuring arrangement at the transmission side, the signal that is to be checked, the useful load signal (working signal) WS, of a wavelength multiplexer (WDM signal) with a plurality of transmission channels for example, is supplied to a first measuring means ME1 via a first coupler K1, whereby only a small part in terms of power must be coupled out. This measuring means has the function of providing measurements of the signal state, or respectively, of the signal quality at the beginning of a transmission path. Signal parameters are the optical signal/-to-noise spacing, the power level or the frequency for example, (*e.g., col./line(s): 2/35-50*).

The useful load signal WS is partly coupled out via a second coupler K2 and supplied to a second measuring means ME2. Within the same time intervals--exactly the same sections of the useful signal--quality measuring of the received signal is carried out and the measured values MES are also supplied to the comparison means MCU. With the aid of the measured values of the transmission side and reception side, this determining to what extent the signal quality has changed and sends the measuring results ME to a central location ZS, (*e.g., col./line(s): 3/5-15*)

Art Unit: 2638

It would have been obvious to one of ordinary skill in the art at the time of invention to use the Heiles measurement and comparison system within the Merli nodes in order to self-diagnose and monitor faults at other points in the network for rerouting traffic. The useful load signal (working signal) WS understood as a channel map.

Fee disclosed an element manager that communicates with the entire network (*e.g., figure 1, e.g., col./line(s): 4/42-56*). It would have been obvious to one of ordinary skill in the art to communicate status as Fee does so that communication is provided with a robust and highly fault tolerant fault orthogonal system (*e.g., col./line(s): 4/52-55*).

*The*

Re claim(s) 19, Merli disclosed a tributary module coupled to transport module, said multiplex module containing at least one transponder for linking data from a selected optical channel to at least one channel of an external tributary network; and a control module configured to generate the switch commands (*figure 2 #274*)

Re claim(s) 16, 22 and 23, Merli disclosed a and initiating a line switch to redirect traffic to an alternate optical path (*figure 2 #208*) to restore data traffic if there is a loss in signal from the neighboring node and status reports are not being receiving from the neighboring node.

Re claim(s) 17, 18, 27 and 32



Art Unit: 2638

Merli does not disclose wherein the second set of optical characteristics include a channel map of active channels in the network. Fee does disclose maintaining the nature and location of faults in the system (*e.g.*, *col./line(s): 4/52-55*). It would have been obvious to one of ordinary skill in the art at the time of invention to maintain a map as does Fee for the quick and efficient rerouting of traffic.

Re claim(s) 29-31, 33 and 34

Determining if the power level of one of the channels drops below a predetermined level and determining if the equipment switch restored power to the dropped channels and notifying neighboring channels of the result of the equipment switch (*e.g.*, *col./line(s): 5/45-65*).

***Allowable Subject Matter***

7. Claims 21 and 28 allowed.

***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David C. Payne whose telephone number is (571) 272-3024. The examiner can normally be reached on M-F, 7a-4p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2638

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dcp

A handwritten signature in black ink, appearing to read "David C. Payne", with a stylized flourish at the end.

David C. Payne  
Patent Examiner  
AU 2638